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A general discussion of methods and materials utilized in updating most departments of the Chicago Public Schools from 1953 to 1964 is presented. Emphasis is placed on the ways in which the science departments of both the elementary and secondary schools were improved.

Other improvements discussed include those for mathematics, foreign language instruction, programed instruction, language arts, audiovisual services, and educational television. Short comments are included concerning ways to increase teacher comprehension and utilization of the new materials, to provide more efficient methods of storage, and to finance the materials.

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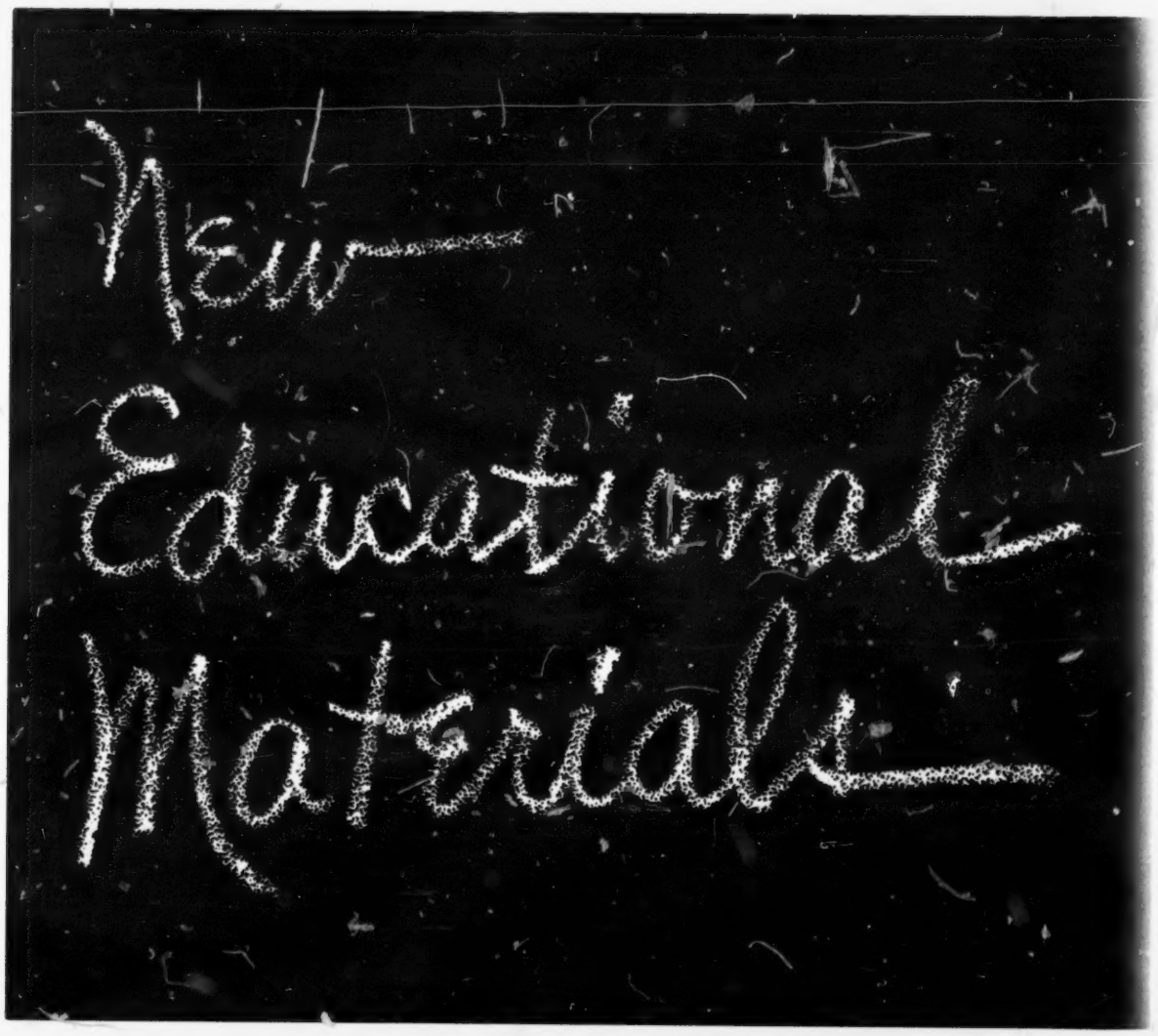

CHICAGO PUBLIC SCHOOLS
AUGUST 1964

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NEW EDUCATIONAL MATERIALS
IN THE CHICAGO PUBLIC SCHOOLS

Study Report Number Fourteen

1964 Series

BENJAMIN C. WILLIS
General Superintendent of Schools

CHICAGO PUBLIC SCHOOLS
August 1964

Educational Materials Laboratory
Office of Education
MAR 1965
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FOREWORD

Study reports of the various educational programs have been made from time to time during the past ten years. These studies are in addition to the review and revision of curriculum materials. Reports have included such areas as elementary education, secondary education, junior college, teachers college, recreation, and the summer school program. Some areas have been formally reviewed and "next steps" recommended once during the past decade while others have been reviewed two or three times.

This report, New Educational Materials in the Chicago Public Schools, is the result of a study conducted by a city-wide committee, as were those named above. The membership on this committee reflects the various geographic sections of the city; the pertinent areas of the educational program, instructional materials, and/or facilities; and the various organizational levels of teaching, administration, and supervisory responsibility.

This report is a contribution to the study of schools approved by the Board of Education on January 9, 1963, and will be reviewed by the Chicago Public Schools Survey Committee.

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INTRODUCTION

The instructions to the Committee to Study New Educational Materials were to prepare a report in which attention should be given to such topics as:

- study of educational television and other audio-visual services
- new instructional materials and programmed materials
- technical aids for teaching speech
- technical aids for teaching foreign language
- desirability of increasing the use of such materials as those listed above
- non-classroom professional services as they exist now, as well as trends or changes in the past ten years or longer.

The committee was asked to look ahead, to concern itself with tools to help teaching, to consider everything but the building and the teachers, to help the teacher be a creative person, and to help the teacher teach more effectively, not just teach harder.

On the basis of the above instructions, the committee devoted itself to:

- a study of the developments within the past ten years in certain areas of materials. The ten-year period was chosen because the decade encompasses a tremendous growth in the development of educational materials available to schools.
- a recommendation concerning the increased use of educational materials already in use and procedures for obtaining appropriate new materials.

In developing this report on new materials, educational philosophy and teaching procedures are not given prominence in discussing the inclusion or exclusion of materials, although it is recognized that materials are

sterile and of limited value unless they are related to a philosophy of education and are specifically adapted to a teaching process. It is inevitable that the evaluation and selection of materials must be based on philosophy and experience. However, some reference to this is made in this statement and additional guidelines are in another report. Restrictions upon content most pertinent to this report and to appropriate size, if the report is to serve its purpose, prevents this report from including all the details of the studies prepared by members of the committee. These studies, however, are the bases of the sections relating to each of the specific areas of instruction to which reference is made herein.

NEW EDUCATIONAL MATERIALS - 1953 to 1964

Background

Instructional materials include books, supplies, and equipment. Books, as such, have been and are such a vital part of education that the two terms are almost synonymous. The contribution of supplies and equipment to good education has become increasingly obvious. As educators turned more and more to concrete "things" to enhance and reinforce the educational process, the availability and variety of materials also have increased. Not only have the benefits of a variety of supplies and equipment been recognized in conventional teaching, but the newly developed areas of knowledge are almost inevitably related to them. The use of appropriate supplies and equipment is not only desirable, it is a necessity.

The great advances in scientific knowledge which have been characteristic of the past decade are reflected in the activities of the Chicago public schools. However, the explosion of scientific knowledge during the past ten years has been characterized by vast expenditures of funds, on a nationwide basis, both private and governmental, whereas the parallel activities of the Chicago public schools have been characterized by proportionately increased but not sufficient funds, to match the pace set by the increase in scientific knowledge. The efforts of the Chicago public schools can best be classified as progressive and selective--progressive in that there had been an awareness of the need for changes in the science curriculum as well as in other areas of the curriculum even

before NDEA funds became available and in that there was a positive reaction toward making the necessary changes; selective in that there has been a continuing evaluation of new science materials available on the basis of function in relation to the curriculum, rather than on the basis of novelty.

The following sections include a discussion of science materials, in detail, and to a slightly lesser degree to mathematics and foreign language materials, for two reasons: first, the materials in these areas are particularly illustrative of the general classification "New Instructional Materials"; and second, the description of the acquisition of materials in these subject areas helps illustrate what can be done and what has been done in the Chicago public schools when more abundant funds became available through the National Defense Education Act.

Science Materials

Prior to 1953, the greatest emphasis in science teaching was in the high schools. The traditional science program obtained supplies through the use of an Approved List of Science Supplies and Equipment. The program in the elementary schools was largely a reading program and was relatively conventional. There was no comprehensive Approved List of Science Supplies and Equipment for the elementary schools. Some standard science supplies were carried in stock at the Division of Supplies and these were adequate for the curriculum at that time. There had been no courses of study or teaching guides since the early 1940's and in some cases, biology for example, none since the late 1930's, until the Teaching Guide for Science in 1955. This guide was an outline of what should be taught in science in each grade, K-14.

In 1952, with the increase in interest in space exploration, there was an increase of science activity in the elementary schools. Many of the members of our staff were aware that if we were to produce the quantities of scientists needed for the future, science teaching would have to be stepped up. A professional committee of science teachers and principals headed by a district superintendent was formed to develop a teaching guide and another similar committee was formed to study the science supplies and equipment available and to make recommendations. Their influence was reflected in the 1955 Teaching Guide for Science, K-14, by the new science supply list, and by the availability of one mobile science demonstration table per district in 1955. Subsequently, there was a greatly increased demand from the schools for mobile science demonstration tables and for sets of science supplies needed to perform various experiments.

In 1957, the staff Secondary Education Report was adopted by the Board of Education, a report which changed high school graduation requirements. Consequently, the total science program was reviewed and plans laid for the writing of supplements to the Teaching Guide for Science to cover in separate volumes the areas included in the K-12 program: K-3, 4-6, 7-8, General Science, Biology, Chemistry, and Physics.

A much greater emphasis was placed upon the teaching of science at all levels in 1959 with the distribution of the supplements for K-3, 4-6, 7-8, Chemistry, and Physics. (Biology and General Science were distributed in 1960.) At the same time, the availability of matching funds from the NDEA, Title III aided and hastened the implementation of the new science curriculum. Another impetus to the science program was the increased time allotment for science which designated a weekly minimum of 50 minutes in the first grade program and a maximum of 300 minutes in the eighth grade program.

The educational plan for making available new kinds of science equipment which were necessary for the new curriculum ran parallel to the issuance of the new guides and utilized the opportunities available through NDEA, Title III funds. The activities in the guides have specific implications for needed equipment and materials. The plan followed in securing the supplies and equipment necessary for the implementation of the goals of the program as stated in the curriculum guides, including both goals of content and of methodology, is illustrative of the sound basis for the selection and distribution of newer educational media. One of the annual educational plans submitted as the basis for a request for NDEA funds includes the following statement:

> To facilitate the teaching of science concretely from the very beginning, "kits" were designed expressly to meet the needs of teachers and children in relation to units in the guides.
>
> The range of activities within a unit was considered in selecting materials and equipment. It is possible to carry out activities designated for the slow, average, and advanced pupil. Materials and equipment were selected not only because they correlate in general with activities in the guides but because they correlate with specific activities within the various ranges of pupil ability.

The mobile science demonstration table converted a classroom into a science laboratory and placed at the fingertips of teachers and pupils water and electricity needed to perform many of the multitude of experiments suggested in the guides.

In the first year of NDEA--1959--in the Chicago public schools educational plan,the priority in securing equipment and materials was given to the elementary school. This was done because the greatest change--that of moving from a "reading" science approach to a laboratory science approach--was made and, consequently, the greatest materials and equipment need was here. Since grades 7 and 8 now contained subject matter for general science for which equipment was essential, the priority within the K-8 program was given to grades 7-8. Next consideration was given to grades 4-6; and then, kindergarten-grade 3.

Every elementary school received science demonstration tables allocated in relation to the number of pupils in grades 4-8 and a basic kit of equipment and materials for use with the table. All schools with a total of ninety or more pupils in fifth grade and above received a microprojector and slides.

A relatively small amount was set aside for the gifted students in physics and chemistry classes in the high school; this decision was made in relation to the stage of development of the new curriculum materials for the high school and the readiness of students for the new and upgraded activities.

In the second year (1960), NDEA funds (Chicago Board of Education and federal government) were equally divided between the elementary and the high schools. This plan enabled greater participation by elementary schools but also a stepped up pace for the high schools. It provided for chemistry and physics teachers to make available to their students more and varied equipment and for biology teachers to prepare their laboratories for activities in the biology guide which was nearing completion. This, it will be remembered, was the first biology guide since 1938. Its use required many new items of equipment not previously found in regular biology laboratories. It called for equipment for students at three levels of achievement—essential, regular, and honors. It foretold of the refurbishing that would be required in all science laboratories at the earliest possible moment.

Among the equipment supplied in 1960 were large steel cabinets with locks and tote trays to house the new science equipment in 337 elementary schools and human anatomy models such as the torso, eye, ear, and heart.

At the high school level increased numbers of student microscopes, prepared slides and slide-making equipment, oil immersion microscopes, and stereo-microscopes with illuminators for examining macroscopic organisms and other objects, incubators, refrigerators, molecular models, centrifuges, pumps, ovens, portable power units, computer kits, ripple tanks, cloud chambers, and student reference books for all levels of science K-12 were provided.

The program of allotments under NDEA in 1961 provided for equipping with science materials those elementary schools which were new, those with increased enrollments, those which needed science items because of a special program in the school, and some allotment of funds for science materials for all schools. At the high school level each school took inventory of its science equipment and ordered, within the boundaries of its allotment based upon the number of laboratories to be equipped, essential materials called for in the new guides. Over a thousand different items were obtained, some of which were kits which counted as one item but which contained over a hundred individual items.

Pursuing our plan to further the experimental approach to scientific inquiry, materials available to elementary schools under NDEA in 1962 included materials in depth. Special kits of materials were assembled for units on electricity, simple machines, heat, light, magnetism, and sound. Large demonstration models of thermometers and galvanometers for pupil reference were made available. Special animal cages with screening too fine for little fingers to penetrate were listed to encourage the study of our animal friends. To free the teacher of the worry of failing dry cells, portable power units were placed on the order list. One hundred and sixteen schools selected them the first year of listing. Tote

trays to facilitate the mobility of science equipment were ordered by 375 schools. Egg incubators were ordered by 39 schools, biological specimens by 117 schools; flower models, plastic human skeletons in miniature, and models of the pumping heart, the skin, and the teeth were ordered by others. Two hundred and sixty-eight schools ordered a model of the solar system.

The science center in the classroom became one of pupil activity. The textbook became only one of the tools used in the pupil's science study. It is now supplemented by an impressive assembly of materials which can aid the pupil in his study. Science encyclopedia, student reference and activity booklets are now in the science reference library found in many of our elementary classrooms.

At the high school level, in general, materials have been supplied in depth to make available to students those materials which can be used in solving problems that arise out of individual study and/or experimental activities. Examples are the autoclave, centrifuge, color comparator pH equipment, hemoglobinometer, microtome, slide warmer, stirring apparatus, microwave optics equipment, oil drop apparatus, stroboscope, analytical balance, and water demineralizer.

As the result of many experimental studies it is believed that, in general, if children are to be motivated to pursue careers in science, their enthusiasm and interest must be kindled in the primary grades. Equipment selected for the primary student in the form of a K-3 kit was made available in 1963. This included many manipulative materials.

In addition in 1963, allotments were increased to small school which had not been able to build up their supply of equipment through previous allotment plans (based upon enrollment).

The current overall plan is one of providing basic equipment to new schools at the time of opening. Through a conference between the principal and the science consultants for that district, the needs of the school are determined and the equipment is provided. Because these schools have their basic and full needs met initially and directly, their yearly allotment under NDEA is smaller unless further need arises. All of new upper grade centers are in this category; they are well equipped.

Allotments to K-8 schools in 1964, also, were increased to provide for funds to secure equipment in breadth and thereby to provide greater flexibility in the science program within a school.

In general, our high schools are well equipped. The greatest need is at the elementary level. It is here that efforts are being concentrated to a considerable extent to improve instruction in science.

Science 9 materials have been similar to those provided grades 7 and 8 except allowance for the greater maturity of the pupil has been made in the selection of items.

Biology equipment has included materials for study in depth such as: kymograph and kit, camera attachment for photomicrography, slides on the embryological development of the chick, frog, pig, starfish; materials on mitosis and meiosis, and various student reference books for room libraries. In chemistry and physics, portable power packs, meters, various other types of materials for measurement, testing of forces, refrigerators, and materials for the experimental PSSC, Chem-Study, and Chemical Bond Approach which are being used in some of our schools by teachers who have received training in PSSC institutes, were supplied.

The 1964 allotments have provided increased funds for the K-6 level. The list of materials supplied to the schools contained items especially

adapted to that grade range. Charts of insects, wild flowers, birds, pets, plastic embedded specimens, and a special series of slides for the micro-projector are but a few examples. To provide for the new units in the 1964 revised guides, geologic specimens and filmstrips on geomorphology were included. Transparent celestial globes for space study were furnished. Models of birds, insects, and dinosaurs became available for the first time at the K-6 level. Overhead projectors with kits of basic materials as starter kits for making overlays were ordered by 156 elementary schools. Prepared transparencies on human anatomy were ordered by 99 schools. These materials, carefully selected by a committee of principals, teachers, and science consultants, are most appropriate for the activities suggested in the science curriculum guides.

Another new item in 1964 is a primary science table. Needs at the primary level are quite different from those for 4-8. Height of the table is lower than the one used at 4-8 so that primary pupils may work from the top. A floating chamber is included for experiments involving buoyancy, submersion, and pressure of water. Storage compartments and tote trays for supplies comprise the remaining components of the table.

Special equipment was ordered in 1964 for high schools offering a course in physical science. This course is available to students who desire an additional year of physical science beyond that included in general science, but who do not wish to enroll in physics or chemistry. A newly designed curriculum guide will be introduced in the high schools in the fall of 1964.

With our policy of offering to students in the seventh and eighth grades the study of the human body, as well as other units originally offered in General Science 9, students since 1959 have been able to "place out" of

general science and enter biology as a ninth grade honors student. If the student successfully takes chemistry and physics in his sophomore and junior years, he is permitted to enroll in an advanced placement science subject, depending upon his interest.

As more of our high schools offer a twelfth year advanced placement science program, equipment suitable for these studies in biology, chemistry, and physics will be expanded on the order lists. Negotiations are proceeding to obtain equipment such as: photomicrographs of parts of cells showing enlargements of various organelles, models of DNA specially constructed to ensure repeated dismantling and reassembly, and various other items. Science consultants are constantly alert to the need for suitable new materials. Whenever they are unable to locate a needed item, they search for a manufacturer who will produce it. Science teachers make their needs known and provision for them is made.

Accompanying the 1964 NDEA order forms was a basic list of materials for science rooms for each principal and for teachers. The lists were compiled by a committee of science teachers, principals, and science consultants. Using the list, a principal and his teachers can plan so that, over a period of time, the basic needs of the school for science equipment and supplies can be met if they have not already been met.

As part of this program, 34 of our science laboratories are in new school buildings and are less than ten years old. NDEA, Title III provides up to 50 percent reimbursement from federal funds for the cost of rehabilitating science laboratories. Consequently, it has been possible to rehabilitate 125 of the laboratories in schools more than ten years old; 95 others are in progress; 134 remain to be done. If as much money can be allocated for this purpose as has been previously, plus that which may be necessitated by rising

costs, we should be able to contract for the remodeling of the remaining laboratories during the next three years.

The 1963 Annual Report of the General Superintendent shows that a total of $934,416.34 was received in reimbursement for NDEA, Title III science. Inasmuch as reimbursements were for about 50 percent of the expenditure it can be assumed that $1,800,000.00 was spent during the period 1959-1963 for science supplies and equipment.

As a result of the ability of the Chicago public school system to take advantage of the opportunities available through the NDEA program, the overall science program has been accelerated and improved, and the inventory of science equipment and supplies demonstrates the realization of an educational plan to put the best and the most useful supplies and equipment into the Chicago public schools.

In addition to the NDEA purchases, the schools have also continued to benefit from ordering from a continually improved Approved List of Science Supplies and Equipment. Beginning in 1959, an approved list was also made available to elementary schools. It provided so much more flexibility in obtaining supplies and equipment, with comparable economy, that the stocking of science supplies at the Division of Supplies was discontinued. Annually, the two approved lists have become bigger and better. Both of these characteristics are due to the increased purchase of available supplies by the schools demonstrating need, and to the increasing participation of teachers, principals, and science consultants in evaluation committees. As the schools become more aware of the items that are available, science teaching tends to improve because the use of these new items inevitably fosters ingenuity and develops greater knowledge. As science teaching improves and imagination flourishes, more and more new items become known to school personnel and are added to the "needs" of the schools, as shown

in the approved list. Many items on the lists are the result of being included in the NDEA recommendations developed by the science consultants in relation to the curriculum and experimental projects.

Mathematics

The pattern in the development of the purchases of supplies and equipment for mathematics, under the provisions of NDEA, Title III, parallels that of the purchase of supplies and equipment for science. However, the NDEA program provided an even greater emphasis for obtaining a variety of mathematical supplies and equipment and an even greater incentive to buy new supplies and equipment than it did with the science area. Science has traditionally been taught with materials and equipment. The acquisition of new supplies and equipment, as part of an expanded science curriculum, was well under way before the passage of the NDEA. Participation in the NDEA program coincided with the emphasis in the curriculum guides upon the "new" mathematics, and it also provided an increased opportunity to acquire many models including three-dimensional devices which would reinforce the teaching of arithmetic and mathematics in the traditional manner.

The NDEA also provided the opportunity, as it did in science, for a coordinated educational plan for the acquisition of supplemental materials to implement the content and methodology in the curriculum, a situation which did not prevail before the introduction of NDEA. Specialists and consultants, acquainted with the area in a depth not possible for every teacher and principal, were thoroughly conversant with the curriculum, were familiar with the new materials which were important to the implementation of the curriculum, knew the needs of the schools, and thus could make positive recommendations for the purchase of supplies and equipment for

specific purposes in relation to instruction and to pupil attainment of curriculum goals. Experimentation could now be coordinated and administered centrally and the results be put into effect on a system-wide basis. Individual schools continued to identify their special needs.

The greatest emphasis, both in number of items and in total expenditures secured, has been in the area of visual aids and manipulative materials. This is as could be expected because of the emphasis on modern mathematics, on understanding, on discovery. Since 1959, a total of 72,516 manipulative materials and visual aids have been purchased, for a total expenditure of $300,656, not including filmstrips and films. A total of 2,016 filmstrips, costing $49,234 and of 338 films, costing $34,410, have been purchased since the inception of the NDEA program. Other items of significance, in relation to the teaching of mathematics, have been the purchase of 144 opaque projectors, costing $34,106, and 25 overhead projectors, costing $6,783.

It should be noted that the acquisition and distribution of overhead projectors has been a feature in the equipment designated for all three of the subject areas included in NDEA, Title III.

The total number of individual items for mathematics purchased during the period since 1959 is too great to list. Most of the individual purchases are for relatively inexpensive items, but items which make a contribution to teaching and learning which goes beyond their small cost. The continuing search for and evaluation of new materials is most efficiently performed by special and qualified educational personnel to whom this responsibility is delegated.

The total amount spent for NDEA mathematics supplies and equipment, 1959 to 1963 inclusive, was $482,236.

Foreign Language

The decade under consideration by the Committee on New Educational Materials is coincidental with a decade of dramatic and fundamental changes in foreign language instruction. The impetus for this change came from military needs during World War II when it was necessary to train thousands of Americans in a short period of time in the effective use of a variety of modern languages. As a result the emphasis in the teaching of foreign language has changed from an emphasis on the grammar and the ability to read a foreign language to a greater emphasis upon the ability to speak the language and understand the spoken language. This new emphasis has resulted in new techniques and methods which have required new types of supplies and equipment to implement them.

The Approved List for Foreign Language in 1955 shows a book-oriented emphasis on the learning of languages. There were no recordings, and the visuals consisted of 16 mm. films which made no specific contribution to the teaching of the language.

There were no Chicago public schools courses of study for any of the foreign languages nor, as far as review of the records can reveal, had there ever been any. In 1957, a committee was formed, through the Curriculum Council, to develop appropriate foreign language curriculum guides. These were developed as K-6, 7-8, and 9-12 guides for French, German, Italian, and Spanish; they were ready for distribution early in 1959. These guides advocated the audio-lingual approach that had been used by the Army in World War II and presented materials based upon the new philosophy. The program involved the use of coordinated and multi-sensory, integrated materials. At that time few of the appropriate materials were commercially

available; the Chicago public schools program and the growth of others across the nation, together with the promise of available funds through NDEA, encouraged the production of the needed materials.

A statement of policy was developed in 1959, indicating among other points that the goals of the program in priority order were listening, comprehension, speaking, reading, and writing; that the program required continuity, depth of study, and qualified instructors.

The National Defense Education Act, Title III was coincident with the growing interest in foreign language teaching in our Chicago public schools and in the nation, and the equipment and materials procured through the assistance of NDEA funds to implement the curriculum can share some of the credit for the improvement of teaching of foreign language in the Chicago public schools.

In 1958, the Approved List for Foreign Language continued to emphasize book titles and to aim at reading and grammar instruction, although there was a listing of visual and audio materials in response to the work going forward in the curriculum committee, as a first attempt at broadening instruction beyond the previous limits. The tremendous growth in the foreign language program in the Chicago public schools was also given impetus by the Chicago City Junior College through its credit courses in foreign languages on the TV College. The Chicago Teachers College North and South both now have language laboratories and have been emphasizing the latest techniques and in-service training for foreign language teachers.

The Chicago Public Schools Policy Statement on Foreign Language Instruction, developed in 1959, to which reference was made previously, was revised in February 1962. This policy statement continues to emphasize depth of study, continuity, articulation, and a qualified teaching staff as

the fundamentals of a successful foreign language program. Among other valuable contributions, the policy statement has been vital in firmly establishing foreign language instruction in the elementary schools, particularly in terms of continuity and depth of instruction. Prior to this time foreign language instruction in the elementary schools had tended to lack unity and direction.

Since 1959, purchases of foreign language supplies and equipment under NDEA, Title III, in relation to an educational plan to implement the curriculum, have been made annually. A review of the materials and equipment purchased emphasizes the continuing re-evaluation and the deeper understanding of new procedures in language teaching.

The 1963 Annual Report of the General Superintendent states that the reimbursement for foreign language under NDEA, Title III has been $200,082. This would indicate an actual expenditure of over $400,000. However, a large proportion of this amount has gone into the construction of language laboratories in selected schools. These laboratories might be considered part of a building, specifically excluded from this report, yet the construction of these laboratories has made possible a more advanced type of language instruction, creating a need for an advanced type of supplies and equipment in the teaching of foreign languages. The language laboratories feature a teacher control-console, containing tape recorders and phonographs. Tape selections and records can be channeled selectively to individual students, small groups, or the entire class. The techniques and problems of using a language laboratory are not within the scope of this report but their widespread installation (13 laboratories in various sections of the city and four more planned for 1965 installation) have generated an increased interest in foreign language instruction and a continuing need for evaluation of instructional materials

for use in the laboratories. Many of the supplies purchased have been for use, specifically, in the language laboratories. Whereas all schools do not have language laboratories, every high school and elementary school where foreign languages are taught have at least one mobile language cart including a tape recorder, record player, filmstrip and slide projector, jackboxes, and headsets.

Audio materials are of primary importance in the teaching of language. Through properly selected audio materials, acuity in hearing, accuracy in imitation and accuracy in reproduction are developed. The selection of the recordings, either tape or disc, must be carefully correlated with other instructional activities. The basic materials must follow a pre-determined learning progression. Supplemental and enrichment materials are acceptable because of their unique contribution to learning. The learning tools must be suitable to the learner. In other words, these materials must be as carefully selected as the conventional materials had been in previous years.

Visual materials also have their place in the teaching of foreign language. They may be used as stimuli to elicit verbal reactions and, as such, can be integrated with audio and graphic materials. This contributes to the complete interaction of the student with the materials. Visuals are also used to convey accurate factual information, and to provide a basis for cultural studies, an aspect of the study of foreign languages that should not be omitted.

Integrated audio-lingual visual materials are still in limited supply but the supply is growing to meet the demand. Because of the hurried attempts by publishers to meet a demand, a rigid evaluation of the materials offered, in terms of the basic program and its aims, is being made in order to weed out the unacceptable materials. The integrated materials place a proportionate emphasis on printed, recorded, and visual components in the material

package. The materials are usually designed to cover a number of years of instruction and this factor provides a sequential progression of learning.

The basic piece of equipment in language instruction is one which reproduces sound, either a tape recorder or a phonograph. Of the two, the tape recorder has so many advantages that it overshadows the phonograph. One of the major advantages is its ability to allow an individual to record his own speech. A teacher may use this feature to make a recording for instructional purposes. A student may make a recording in order to hear himself and to improve his speech. The tape recorder makes it possible to bring into the classroom a variety of authentic native voices. The recorder also provides for the means of increasing the number of listeners, through additional earphones attached to the recorder, or through a distribution system such as a language laboratory.

During 1963-64 the curriculum guides for French, German, and Spanish were completely rewritten. The new guides continue the use of the audio-lingual methodology; they have been developed in two volumes for each language, K-6 and 7-12. Each guide has a set of tapes, recorded by natives, for use with the guides as well as a set of visuals for use in stimulating situation conversation; in addition, the French guides have sets of slides, in color, which were taken in France.

The foreign language consultants assist the language teachers by demonstrating the new materials, equipment, and methodology, and by helping in the articulation of the elementary program with the high school program. New materials and equipment are evaluated by a committee of teachers, principals, and the foreign language consultants.

Most of the new supplies and equipment for the teaching of foreign language have come through the expenditure of funds as part of NDEA, Title III. This was done in order to get the necessary amount of excellent materials, appropriate to the goals and methods of the program, into the schools at the lowest cost to the Board of Education.

Programmed Instruction

Programmed instruction is generally considered to include mechanical, printed, or electronic apparatus which present teaching materials in small segments, each segment requiring a response. Equipment for this type of instruction is usually described by the term "self-instructional device."

Programmed instruction has five features: (1) small steps; (2) self-pacing; (3) active response; (4) immediate knowledge of success; and (5) self-testing. These features may be presented by a great variety of devices, including books.

Programmed instruction received its first impetus in the Armed Forces which have been using this type of instruction for about twenty years. Many businesses have found programmed instruction valuable in their training programs. It has become a factor worthy of note in education since just shortly before 1960.

The advantages and disadvantages of this concept of instruction have created considerable controversy. As is true with many educational innovations, the introduction of a new device or method is apt to be greeted with great enthusiasm, carrying the device or method to great peaks of popularity, with a corresponding extreme reaction when some of the flaws and disadvantages begin to become apparent. The pendulum in the field of programmed instruction equipment has swung very wide. This new concept has had its

effects in business circles because the concept of programmed instruction, involving the manufacturing of devices to be sold with a considerable markup and which are acclaimed as the salvation of the educational system, encouraged many firms into production of equipment. This same situation was also evident in the manufacture of language laboratories. There was a great increase in the number of firms offering language laboratories, a sudden realization that the market was not as rich as it appeared and an equally sudden diminuation firms in this business. As prestigious a magazine as Dun's Review and Modern Industry had an article in its May 1964 issue entitled "Programmed Learning: Return to Reality," with the subtitle "A High-Flying Industry Comes Down to Earth."

In such a period of claims and counter-claims, the activities of the Chicago Board of Education in this area have been restrained and judicious. In 1961, three high schools and two elementary schools participated in programs to test the effectiveness of programmed instruction. Both machines and programmed textbooks were used. Programs for algebra, statistics, geometry, electricity, spelling, and some elementary school arithmetic were among those used. The algebra program was used with bright eighth grade students as well as with ninth grade students. Continuous studies have been in progress, with a variety of emphases, since 1961. Additional experiments are under way at one high school and two elementary schools; and individual teachers at two elementary schools have devised a program with the help of the consultants in the Department of Curriculum.

There have been a variety of problems, as might be expected in a new industry, ranging from machine breakdowns in the classroom and the lack of space for machines to the complicating factor of traditional algebra program content when the Chicago public schools curriculum requires a program of

modern algebra. Some of these problems have been solved. There, also, have been, from the beginning, a variety of potential strengths.

In perspective, programmed instruction is seen to have merit but to have some problems which should be solved and some research which should be done before exposing great numbers of children to any one program. Evidence seems to point to the fact that some types of programs are most appropriate for certain types of learners, and that others tend to produce the best results from other types of learners. More definitive knowledge is needed with reference to what pupils should use which types of programs in which grades and as to the teacher's role in varying situations.

Whenever the Chicago public schools adopt a technique or a method, they have to consider the effect in terms of mass education, the effects on hundreds of thousands of individual children. Moreover, expenditures for supplies and equipment, in any area, inherently involve great sums of money because of the size of the system. The conservative approach, adapted by the Chicago public schools in its evaluation of programmed instruction, is contrary to the all-out approach of some school systems, but the schools are to be commended for good judgment in relation to the effect on children's learning and frugality in relation to the best use of limited funds. Thus relatively small scale experimenting, for the present, seems best from all points of view.

The Teaching of Speech

This segment of the report will not include any reference to speech therapy, as it is carried on by the Department of Special Education, nor is the teaching of "Speech," as a subject in high school, considered pertinent here.

It is generally agreed that purity in speaking the native tongue is one of the educational responsibilities of a school system. This activity is generally included in the subject area referred to as Language Arts. "Speaking and Listening," as a section of the language arts curriculum guides, competes with other categories such as "Reading," "Literature," "Spelling," and "Grammar." The Approved Textbook List for Language Arts also contains lists of manipulatives, filmstrips, and recordings, all of which are available through requisitions. The approved list also contains many books devoted to correct speech and to speech improvement. It is inevitable that teachers will find that their teaching of speech will tend to emphasize speech improvement for those who have difficulty, rather than giving an equal emphasis to speech purity, for those who already are articulate and comprehensible.

There is one device presently on the market which has potential in improving speech by emphasizing the correct sounds of words. This device is a type of tape recorder-reproducer, but the tape is fastened to a card which is run through a slot on the machine, rather than off a tape reel, as is done on the typical taperecorder. The card usually has a noun, a picture of the object described by the noun, and a reproduction of a voice saying the word. The child sees the word, sees the picture, and hears the voice. It is possible for the child to record his own voice on this machine so that he can compare his speech with the one already on the tape.

This machine has been undergoing experimentation in several schools with extremely promising results. It would appear that this machine is one of the many devices that, with a somewhat considerable expenditure of funds, may help in improving speech.

The conventional tape recorder is considered preeminent as a device in the correct teaching of speech, just as it is in the teaching of a foreign language. It has been recognized that the language laboratory currently used for the teaching of a foreign language would be equally good for the teaching of speech in the language arts program, in general, and for the improvement of speech patterns and articulation in particular. At the present time there is no source of funds for laboratories for speech purposes comparable to NDEA, Title III; and local funds are not sufficient now to permit the installation of such laboratories.

Other Subject Areas

The other subject areas, in both the elementary and the high schools, have shared in the increasing use of new educational materials. Their story is not as dramatic, however, partly because the nature of the subjects do not always lend themselves toward a greater utilization of new educational materials but, to a great extent, because funds for these subject areas are not available through anything comparable to the NDEA, Title III program, nor has there been any comparable stimulus to industry to produce new materials.

The teaching of social studies has always featured the use of maps, charts, and globes. Good teaching has also put a heavy emphasis on films, filmstrips, and other visuals discussed in the next section. The manufacturers of maps, charts, and globes have, with the advice and counsel of educators, continually improved their products. However, these activities do not merit an extended discussion in a report on "new educational materials" except to indicate that new developments in the NDEA program are

expected to be reflected in new and improved materials in the social studies area. Certainly, urban problems and the increasing smallness of the world have already produced some results, and it is expected that the definitely new Chicago public schools curriculum approach will bring others.

Vocational education in Chicago has expanded. The introduction and growth of the upper grade center program has created a notable increase in vocational experiences in the elementary schools since "shops" for boys and girls are a feature of this program. General shops for boys, with a variety of types of equipment, and homemaking rooms for girls, provide new and practical learning experiences for the seventh and eighth grade students in the upper grade centers. These special rooms are, in many instances, equal to, if not superior to, the similar rooms in high schools.

"New" vocational classes and shops have been recently developed at the junior college level and/or as part of the "Manpower" program. It is anticipated that these programs will be reflected in changes in high school programs. The recently completed Curriculum Council study of vocational education is also expected to produce changes in this field.

The teaching of art has received new emphasis, also, with the development of the upper grade center program. Special art rooms, designed and equipped to provide the maximum experiences with a wide variety of materials, have been made a feature of this type of school. As finances are available, the high school facilities are being modernized to provide full art laboratory opportunities.

Audio-Visual Services

The Division of Visual Education for providing visual material originally, and audio-visual material later, has been in existence with the Board of Education since 1917. Its earliest efforts were concerned with the circulation of

slides. In the 1930's the circulation of silent films was begun, with the schools obtaining their own silent projectors through their funds which they raised. With the advent of the 16 mm. sound projector, costing considerably more than the silent projector, the Board of Education instituted a "share-the-cost" project, encouraging schools to buy sound projectors, with the Board supplying one-half of the funds. Beginning in 1957, the total cost of the purchase of projectors was borne by the Board of Education and the increase in the purchase and utilization of the projectors developed greatly.

The use of filmstrip projectors has also increased a great deal. A sound motion picture film is relatively expensive and, since it is probably used only once during a semester in the grade or grades for which it is appropriate in each school, the distribution of this film from a central film library is considered the most efficient and economical method of providing films. Maximum utilization of films is thus assured also because each copy is available to and is shown in many schools throughout the year. A filmstrip costs relatively little, and it is possible for a school to buy its own filmstrips and maintain its own library. Furthermore, because of the great diversity of filmstrips, schools can use their own initiative in deciding what filmstrips to use, providing greater flexibility in selection. Suitable filmstrips are listed in various approved lists of instructional materials so that every subject area has supplementary material suggested to enhance the teaching of the subject.

In 1964, there are more than 2,200 sound motion picture projectors and 2,600 filmstrip projectors in service in the Chicago public schools. In 1963-64, approximately 165,000 individual shipments of films were made to to the schools. The purchase of all supplies and equipment for audio-visual use in the schools is done through a system of committee evaluation.

Projectors are purchased on the basis of competitive bidding, with the low bid on an approved projector being selected. Films and filmstrips are purchased for the Division of Visual Education, or approved for listing, only after having been evaluated by committees of qualified personnel.

The recent development of a small, relatively inexpensive motion picture projector which uses a film encased in a cartridge has been noted. The insertion of a cartridge eliniates the threading of film so that the projector can be operated by inexperienced users. Furthermore, the size of the projector and the picture it projects is small enough so that the device can be used for individual instruction and/or small group instruction. The subject matter of the film is usually limited to a fairly specific instructional process, and lasts about five or six minutes. This device does not replace the 16 mm. sound motion picture projector and film. Its greatest potential seems to be for use in small groups or for individual instruction, either introducing an activity or providing additional learning experiences in the activity. Developments are coming fast in this field; it is an area to watch.

The introduction of new educational materials in the audio-visual field will probably be most evident in new films, filmstrips, and transparencies. All three types of educational materials must be selected after a careful evaluation of their appropriateness to and coordination with the curriculum. The 16 mm. sound films, because of their expense, will continue to be circulated from a central depository as the most feasible method. The use of films in teaching has become a well accepted and extensively used activity in the Chicago public schools. The number of filmstrip projectors, opaque projectors, and overhead projectors already in the schools is evidence of the utilization and continued demand for filmstrips, transparencies, and other visuals. The ingenuity of that section of the American economy devoted to the production of audio-visual material will continue to provide an abundance

of materials from which suitable material can be selected by qualified and interested individuals or organizations.

Audio-visual supplies and equipment are used in the work done in reading clinics and in reading laboratories in the schools. The use of tachistoscopes and a variety of mechanical and electronic reading accelerators as well as special printed material provide the teachers with an opportunity to explore every possible technique in improving reading ability.

Educational Television

The rapid growth of educational television within the past few years validates the selection of a ten-year period for review and consideration by this committee. The Chicago public school system has pioneered in the use of television in education through the use of commercial stations and through the TV College on WTTW, Channel 11.

In-service television programs in 1958 and 1959 for K-3, 4-6, and 7-8 elementary school teachers in the subjects of language arts, mathematics, science, and social studies were co-sponsored by the Department of Curriculum and the Chicago Teachers College. These programs were indicative of the possibilities of the use of mass communication media in a school system as large as this one. They were made possible through a contribution of air time on open circuit television by a local television station.

The TV College of the Chicago City Junior College is well established and has proved its value in providing an unparalleled opportunity for those who cannot attend the conventional classes to participate in the junior college program. An Associate in Arts degree is awarded upon successful completion of the requirements, just as in the regular college.

Through the cooperation of a local commercial television station, the Department of Curriculum, since 1960, has sponsored a daily half-hour program for high school credit. Anyone over sixteen years of age not attending a regular day school may enroll for credit.

The Chicago public school system also has participated in the Midwest Program on Airborne Television Instruction. At the inception of the MPATI program, only two schools were equipped to receive the UHF broadcasts on Channel 72 and 76. For a period of time, Channel 11 was translating the UHF MPATI programs to VHF, which could be received on the standard television receiver, such as is standard equipment in most schools since 1958. When Channel 11 discontinued translating the UHF programs, most of the schools were unable to receive the MPATI programs. Accordingly, additional schools were provided with equipment and facilities for receiving MPATI telecasts on UHF Channels 72 and 76. At the present time, twenty-seven Chicago public schools are so equipped, of which five are also equipped for closed circuit television.

The discussion of educational television inevitably includes a discussion of "building," and the proper utilization and origination of telecasts, rather than a discussion of educational materials only. For example, the closed circuit television installation at the Byrd Elementary School is a far more complicated topic than a simple matter of educational materials, although the telecasts originating in its studio depend on a great variety of educational materials for the greatest impact upon the viewers. This is one of the advantages of television. One teacher, before a camera, using selected educational materials, may accomplish the same purpose as a large number of teachers using the same materials. The cost of the material for

the television teacher is much less than the cost of the material for all of the teachers. The cost of the television system is great, but the total effectiveness of the television teacher may be greater, because of personality, skill, knowledge, and adequate time for lesson preparation than the sum total of the individual effectiveness of the individual teachers. Furthermore, the telecasts publicize new materials as well as the procedures for their most effective use.

The closed circuit system at Byrd permits programs to originate in the television studio and in any classroom in the building; two-way communication, also, is possible.

In addition to the 26 classrooms at the Byrd School which participate in the closed circuit television programs, the network has been expanded to include four neighboring schools. This expanded network is providing substantial experience in the values of education through telecasts and in the most effective ways to present lessons via the television medium for the best learning results.

The Chicago Teachers College North, also, has a closed circuit television system. Here, programs may originate in any classroom, auditorium, or other area, with the possibility of two-way intercommunication. Regular television signals may also be transmitted through this system. Some of the study carrels, whose placement throughout the school is a feature of Chicago Teachers College North, are included in the closed television system. This moves them a step closer to the ideal use of study carrels as "Q" spaces. The college also has a responder system in the auditorium which operates with the Teleprompter device. Responder units on the arm of the auditorium seats are linked to an instructor's console so that the instructor may know immediately the percentage of correct and incorrect responses to questions

presented on the Teleprompter screen. This responder system is still in its period of early development and no evaluation has been attempted although it is considered that its installation greatly increases the effectiveness of the Teleprompter as a teaching device.

During the summer of 1964 both the closed circuit television system at Byrd and at Chicago Teachers College North were used to great advantage in a modern mathematics in-service program for teachers. The programs, co-sponsored by the Chicago Teachers College, North and South, and by the Department of Curriculum, were under the leadership of Dr. Patrick Suppes of Stanford University and Dr. Robert Davis of Webster College. Not only were the closed circuit systems used to tremendous advantage, permitting approximately 800 teachers in small groups of 20 to 25, each with its own leader, to view instruction and demonstration teaching; but, in addition, the value of the Teleprompter and responder system in the section at Chicago Teachers College North and of many of the newer educational media was clearly illustrated.

A closed circuit television system is proposed for the Loop Branch Chicago City Junior College, providing for an extension of selected television programs into seven locations in the building.

Although educational television, through its novelty and its potential, attracts considerable attention, educational radio continues to be an important factor in the program of the Chicago public schools. Every school has at least one radio which will receive the FM signal of Station WBEZ, owned and operated by the Board of Education. This station was licensed by the Federal Communications Commission in 1941. The station's schedule has grown to more than 100 programs weekly and each program has a guidebook for distribution to the schools. These guidebooks not only outline the entire series but contain

suggestions for maximum utilization of the program. The use of radio as an educational device should not be overlooked because of the increased popularity and the awareness of the potential of educational television. Educational radio programs are considerably less expensive to present and in some instances may be just as effective as a television program which does not require visual demonstrations.

Non-classroom Professional Services

Non-classroom professional services are reviewed in a study report devoted to the subject. Non-classroom professional services are treated here only as they relate to making available the most appropriate and effective educational media for teaching and learning.

The descriptions in this report of the kind and extent of instructional materials in the Chicago public schools has included frequent reference to the consultants in the Department of Curriculum Development. The creation of the position of consultant was coincidental with the establishment of the National Defense Education Act, Title III. Although the primary purposes of the consultants are to assist in improving the level of instruction in the Chicago public schools, to assist in the preparation of curriculum guides, and to assist, generally, in in-service and experimental activities, the contribution of the consultants to the judicious selection and distribution of instructional materials has been great. The services of these highly professional individuals have helped make participation in the NDEA, Title III program effective.

Inasmuch as the value of the subject area consultants in the selection of instructional materials has been demonstrated, per force accidentally through these unusual circumstances, the contributions of these professionally

qualified individuals in the selection of materials should be continued. It would be extremely difficult to provide appropriate materials and equipment, in the variety and in the quantity which experience has proved necessary to a vital and expanding educational program, without a definite, positive, and continuing assignment of responsibility in this activity. Participation in the recognition, evaluation, and selection of new educational materials can also increase the personal professional competency of the individuals involved. The school system profits as a result.

COMMENTS AND RECOMMENDATIONS

The members of the Committee on New Educational Materials consider the following factors to be of prime importance in the future utilization of educational materials, both new and conventional. They are (1) comprehension; (2) space; (3) financing.

Comments

Comprehension

The principals who were members of the committee have stated that the supply of educational materials available to the schools has been excellent. There has been a problem, however, in the matter of making the most effective use of the items received. Maximum utilization of the material which was delivered to the school is a major goal. In some cases, a lack of experience exists on the part of school personnel as to the purposes of and techniques of using the material. The committee members are unanimous in emphasizing the importance of acquainting the teachers both with the great variety of educational materials and with the purpose of the materials. Some instruction in the proper techniques for achieving the purpose for which the materials and equipment are designed is essential. In-service meetings by district, either monthly or semi-annually, by means of radio or television, possibly using released time (such as Wednesday afternoon when many children are receiving religious instruction) have been suggested. Experimentation in the schools, with frequent and meaningful follow-ups from

those initiating the experimentation, and open channels of "feedback" from the schools have been proposed. The techniques for increasing comprehension of purposes and procedures through these methods are many, and all can be effective if properly planned.

Another general method of increasing the awareness and understanding by teachers of new and acceptable instruction materials is through the use of displays. It is recommended that these displays be local, immediately available to a group of teachers without traveling considerable distances. Displays could be set up in districts, or in slightly larger geographic areas. They might be mounted in trailers for mobility, going from school to school. The necessity of a personal contact with materials was emphasized over and over by committee members. Several of the principals have found that having a display of available material mounted in a storeroom in their own school, so that teachers can see and handle the material, with hints and suggestions as to its utilization, has greatly increased the utilization of the material already supplied. The emphasis on local availability of the displays recognized the outside responsibilities of many teachers who cannot consistently use their non-teaching time for professional purposes. Bringing the material to the teacher may well increase the utilization beyond the expense of the activity.

The abundance of material now available in the schools has created a logistics problem. The principals have reported that a great deal of the time of professional people, either the principal or teachers, is occupied in organizing the transportation and distribution of the material from one room to another, especially if the material is kept in a central location and is used by more than one teacher. This is particularly true in scheduling visual material. The committee feels that the professional competence

and knowledge of the individual handling this distribution greatly increased the efficiency of the distribution but the committee questions the economy of using highly trained persons for this purpose.

It is suggested that the growing trend to have the library the instructional materials center be made official policy and that consideration be given to the use of non-professional personnel, with some comprehension of the purposes and education values of instructional materials, to assist the librarian in organizing and managing the center. There have been recommendations from many sources concerning possible use of non-professional personnel in various other capacities in a school. This may be considered as suggesting a possible additional responsibility for such people. The use of the library as the instructional materials center does not eliminate a space problem but does facilitate organization of the materials for maximum ease in distribution and does make it possible for a trained person who can prepare displays and give in-service assistance in each school building.

In addition to the comments and recommendations above, the committee felt that one great need was a consistency in operations, a repetitiveness of programs, a follow-through for succeeding generations of teachers. Very fine professional in-service programs have been presented but rarely repeated. It is recognized that the number of these programs can grow by accretion, and that so much time can be devoted to repeating previous desirable activities there is no time for fulfilling the primary function of a school system. This accretion can be eliminated by constant re-evaluation of in-service programs and by a reluctance to add to the number of the programs, concentrating only on those which are most effective.

In recapitulation, the committee recognizes the value of the materials and the programs which have been and are now available, and recommends that definite procedures be established to insure the effective procurement of new educational materials, their distribution to the schools and within the schools, and their maximum utilization by teachers. The in-service programs should be cyclical in that they would repeat themselves periodically in order to get the maximum involvement of the greatest number of teachers.

Space

Educational materials must be stored. When they are stored they must be readily available which means they must be stored in some kind of order. Most school buildings do not have the space available for safe and orderly storage for the increasing quantity of educational supplies and equipment. The necessity for transporting larger items of equipment ages them before their time because the relatively few pieces of equipment in each school must be moved frequently from room to room and floor to floor in order to get maximum usage. As more equipment is made available, the problem of moving larger items of equipment from floor to floor disappears; however, secure storage space remains a problem.

A crowded storeroom is inefficient in that items get hidden because there is lack of space to store them properly. The members of the committee have stated that a serious detriment to the effective use of instructional supplies and equipment is inadequate and insecure storage. This is a "building" problem and the additional space recommended is costly and must frequently take a lower priority to the need for classrooms. However, the use of the library as the instructional materials center, although it does

not eliminate the problem of needed space, does reduce the problem in many cases and does facilitate proper storing and ease of distribution.

Finance

It has been demonstrated that the funds that were expended in compliance with NDEA, Title III served two purposes: they doubled the purchasing power of the dollar, and they made it possible to have an organized program for the procurement and distribution of desirable educational materials to the schools. The decisions made, regarding the purchase and distribution of materials, were basically those of responsible specialists and the resulting distribution to the schools made sure that all schools would receive an increased number of items suitable to their instructional needs. Without the NDEA program, this evaluation, purchase, and distribution procedure might not have happened. Assuming that the NDEA program will eventually terminate, it should not also be assumed that the benefits of this acquisition program will be abandoned.

An allocation of funds for specific items of educational supplies and equipment necessary to implement teaching and learning situations should be administered in a manner similar to that used for NDEA, Title III. The NDEA experience supports this argument. The manner in which this is to be accomplished can only be suggested in this paper. The funds available are limited. The needs of each school should be analyzed in terms of the inventory accumulated through purchases in previous years, in terms of the stated requests of the principal, and in relation to new developments in the field or to need of great quantities of older items for maximum efficiency in use. The funds should provide for foundation levels of the best educational materials available.

Recommendations

Based on a summary of the previous discussion, the following recommendations are presented. It is recommended that:

1. In-service meetings, by district, either monthly or semiannually, possibly using radio or television, to acquaint teachers with the great variety of new educational materials be planned and scheduled, and that the meetings feature personnel qualified to provide the "what," "why," and "how" regarding the materials.

2. Displays of new educational material at district offices or at easily accessible locations within the city, or mounted in a mobile carrier, be provided in order to increase teacher comprehension of educational material. The maintenance of these displays should be the responsibility of the appropriate central office department.

3. Non-prof ssional, non-classroom personnel to assist the librarian and principal in effecting the maximum usage of the educational materials within a school be provided.

4. Preparation and presentation of professional in-service programs, distinct from the first recommendation above but supplementing it, be provided and repeated on a cyclical basis in order to keep up with the turnover of teachers. For example, a number of experimental programs in the use of unique and potentially valuable educational equipment could be initiated, carried on, evaluated, and reported in a manner emphasizing the practical advantage to classroom teachers.

5. Safe and adequate storage space for valuable educational equipment in order to provide maximum utilization through permitting its orderly storage and distribution be provided.

6. Funds to be administered in a manner similar to that which has proved successful in the NDEA, Title III program, be allocated for the purchase of educational materials and supplies, in order to benefit each school through expenditures for selected materials which might otherwise not be available.

SUMMARY

The experience of the past decade in the acquisition of new educational materials has been so successful that it establishes a pattern for the future that should not be ignored. The ingenuity and resourcefulness of the American economy will continue to create new devices and methods that are commercially available for school systems. It would not be advisable to attempt to forecast, in specific detail, the new items which can be expected from the suppliers of educational materials. New educational materials will be developed and promoted, and many of them will be surprisingly unique and unconventional. They will be accepted and utilized to their maximum only if the procedures for acceptance and utilization are well established, well understood, and flexible.